

Amendment
Serial No. 10/730,061
Attorney Docket No. 032019

AMENDMENTS TO THE DRAWINGS

The attached replacement sheets of drawings include changes to Fig. 2A.

REMARKS

Claims 1-14 are pending in the present application. Claims 5-14 are rejected. Claims 7-14 are herein amended. New claims 15-17 are added herein. Claims 5 and 6 are herein cancelled without prejudice.

Drawings

Although not mentioned by the Office Action, Applicants noted that Figure 2A contains a typographical error. The text “Miss mutch” should instead read “Mismatch.” Applicants herewith submit a replacement sheet in order to correct this error.

Applicants’ Response to Claim Rejections under 35 U.S.C. §102

Claims 5-14 were rejected under 35 U.S.C. §102(b) as being anticipated by Konrad (U.S. Patent No. 5,789,167).

It is the position of the Office Action that Konrad discloses the invention as claimed. Konrad is directed at a DNA analysis device including a first electrode 120 and a second electrode 130 mounted on planar support 110. As illustrated in Figure 1, Konrad also includes a region 140 of first electrode 120 to which an anchor sequence is attached. However, it appears that Konrad also suggests attaching the anchor sequence to the planar support 110 directly. See column 6, line 58 to column 7, line 16.

Konrad discloses providing an electric field between the first electrode 120 and second electrode 130. Column 15, lines 46-65. Konrad also discloses the use of a magnetic field at

column 16, lines 46-67. However, in Konrad, a magnetic field is contemplated as an alternative to an electric field. Konrad does not disclose or suggest using an electric field and a magnetic field simultaneously.

Therefore, Applicants respectfully submit that Konrad does not disclose or suggest an apparatus which moves biopolymers “by making said electric field and magnetic field act along the surface of said biochip substrate.” Favorable reconsideration is respectfully requested.

Claims 5-14 were rejected under 35 U.S.C. §102(e) as being anticipated by Chen et al. (U.S. Patent Publication No. 2003/0087292).

It is the position of the Office Action that Chen discloses the invention as claimed. Chen is directed at a hybridization apparatus utilizing Lorentz force. As illustrated in Figure 34 and discussed at paragraphs [0190] and [0191], the apparatus includes two electrodes, providing an electric field. The apparatus also includes two magnets (not illustrated), which provide a magnetic field. As a result, “the Lorentz force will push the target molecules to migrate towards the probes on the substrate surface.”

The present claims recite additional structural features of the hybridization equipment. Specifically, claim 7 recites that the electrodes are bow-shaped. Support for this is found in Figure 7, and page 6, lines 2-4. New claim 15 recites that one of the electrodes is shaped as a straight-line, while the other is comprised of a plurality of individual electrodes. Support for this is found in Figure 8, and page 6, lines 4-9. New claim 16 recites that the electrodes are of a comb-teeth shape, with the sites being positioned between the comb-teeth. Support for this is

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found in Figure 9 and page 6, lines 10-12. Finally, new claim 17 recites that the electrodes are separated from the substrate, and are positioned on an electrode holding member. Support for this is found in Figure 13 and page 6, lines 32-34. Applicants respectfully submit that none of these structural features are disclosed or suggested by the cited art. Additionally, Applicants also herein make amendments to the claims in order to improve their structure. Favorable reconsideration is respectfully requested.


For at least the foregoing reasons, the claimed invention distinguishes over the cited art and defines patentable subject matter. Favorable reconsideration is earnestly solicited.

Should the Examiner deem that any further action by applicants would be desirable to place the application in condition for allowance, the Examiner is encouraged to telephone applicants' undersigned agent.

If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

WESTERMAN, HATTORI, DANIELS & ADRIAN, LLP

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Ryan B. Chirnomas
Attorney for Applicants
Registration No. 56,527
Telephone: (202) 822-1100
Facsimile: (202) 822-1111

RBC/jl

Enclosure: Replacement sheet corresponding to Figure 2A